



NOAA Community-based Restoration Program



Oak Island Salt Marsh Restoration Revere, Massachusetts

Oak Island Salt Marsh, located northeast of Boston in the city of Revere, is part of a 1,800-acre coastal wetland area known as Rumney Marsh. Over the past 300 years, the area surrounding the marsh has been heavily impacted by urban development and in various areas used as a landfill, for industrial uses, for residential development and for transportation crossings. Still, with all these activities, US Fish and Wildlife Service has characterized Rumney Marsh as “one of the most biologically significant estuaries in Massachusetts north of Boston” and the state of Massachusetts has designated it as an “Area of Critical Concern.” Salt marsh vegetation including spike grass (*Distichlis spicata*), cordgrass (*Spartina alterniflora*), and salt meadow hay (*Spartina patens*) are prevalent through the area and provide habitat for many wildlife species including birds, invertebrates and fish. At least 5 species of state listed endangered, threatened or of special concern species of birds are known to use the area. The marsh also provides important habitat for migratory birds including the common loon (*Gavia immer*), blue-winged teal (*Anas discors*), osprey (*Pandion haliaetus*), snowy owl (*Nyctea scandiaca*), common eider (*Somateria mollissima*) and black-bellied plover (*Pluvialis squatarola*).

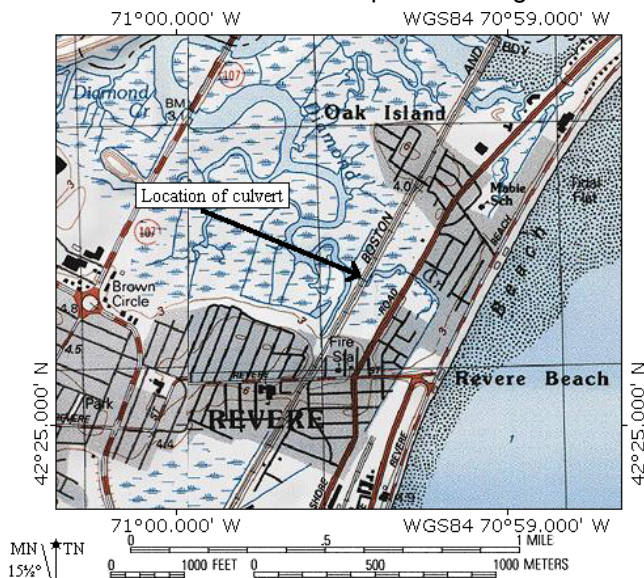


Oak Island Salt Marsh

Unfortunately, the MBTA North Shore Commuter line and Route 1A form a barrier isolating the Oak Island salt marsh from the main marsh system and significantly limiting the amount of tidal waters entering into the marsh. When the railroad tracks were constructed a small culvert was installed underneath them, but the culvert is insufficient in size to allow for adequate tidal flow. Reduced tidal exchange has lowered salinity levels in the marsh degrading the habitat for use by fish and birds as well as encouraging the spread of invasive plants such as the common reed, *Phragmites australis*, which outcompetes native salt marsh vegetation. Stands of *Phragmites* pose a large fire hazard and intense *Phragmites* fires occur in the marsh almost every year. In addition, the undersized culvert does not allow for adequate drainage after rain events and flooding has also been a frequent concern for nearby low-lying residents.

With assistance from the NOAA Community-based Restoration Program, the City of Revere has taken the lead along with the support of other project partners to restore tidal flow to the Oak Island salt marsh. The existing culvert will remain and an additional culvert will be installed with a self-regulating tidegate underneath the railroad tracks. Over 2 acres of fill will also be excavated to regrade the area to typical marsh elevations. The total project cost is estimated to be \$890,000 with project completion targeted for Fall 2003.

Benefits to restoring tidal flow to Oak Island salt marsh are numerous. Raising salinity levels will help control the spread of *Phragmites* as well as encourage the growth of native salt marsh vegetation. Promoting tidal flow will also allow for the passage of fish and invertebrates into the marsh as well as provide





MBTA trains cross Oak Island Marsh



Project partners survey the existing culvert

Council, Revere High School, Massachusetts Wetlands Restoration Program, Coastal Zone Management Program, Areas of Critical Environmental Concern Program, Northeast Massachusetts Mosquito Control and Wetlands Management Division, Massachusetts Division of Marine Fisheries, US Environmental Protection Agency, US Fish and Wildlife Service and the NOAA Community-based Restoration Program. Many departments and offices within the City of Revere have contributed to the success of this project including the Office of Planning and Community and Development, Department of Public Works, the Conservation Commission and the Office of the Mayor.

The NOAA Community-based Restoration Program seeks to involve communities in the restoration of marine and estuarine habitat. Partnerships with Federal agencies, states and local governments, non-governmental and non-profit organizations, businesses, industry and schools have assisted over 700 projects nationally including 49 within the Gulf of Maine to restore coastal habitat. The NOAA Community-based Restoration Program and its partners provide funding and expertise to projects that promote coastal stewardship and a conservation ethic. Through partnerships, the Community-based Restoration Program has been able to leverage \$3-\$5 on average for every NOAA dollar invested.

important nursery and spawning areas. Marine species expected to benefit from the restoration include blue mussel (*Mytilus edulis*), winter flounder (*Pseudopleuronectes americanus*), rainbow smelt (*Osmerus mordax*), menhaden (*Brevoortia tyrannus*), striped bass (*Morone saxatilis*), and various crab species. Birds, including black duck (*Anas rubripes*), mallards (*Anas platyrhynchos*), snowy and great egrets (*Egretta thula*, *Ardea alba*), great blue heron (*Ardea herodias*), sharp-tailed and seaside sparrows (*Ammodramus caudacutus*, *Ammodramus maritimus*), and greater and lesser yellowlegs (*Tringa melanoleuca*, *Tringa flavipes*) will benefit from added habitat and forage area. Furthermore, the addition and replacement of the culverts will help to provide flood protection during rain events through increased drainage and the self-regulating tide gates will control high tidal surge. Moreover, this project will provide excellent educational opportunities through community outreach activities as well as opportunities for local students to learn more about salt marsh ecology. In total, 30 acres of salt marsh will be restored through the restoration of tidal flow.

This project is part of a larger effort by the City of Revere and other organizations and agencies to restore Rumney Marsh. Thus far, over 120 acres of salt marsh have been restored through their efforts. As there are low lying properties adjacent to the marsh, the City of Revere has been a leader in New England in the use of self-regulating tide gates, which allow tidal flow while controlling flood waters in adjacent developed areas. Since 1997, restoration efforts in Rumney Marsh have led to the replacement of 10 standard tide gates by self-regulating tide gates.

A number of organizations and agencies are working together to restore tidal exchange to Oak Island salt marsh including the City of Revere, Saugus River Watershed

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